

REMARKS

Applicants present claims 22 to 44 for examination. Claim 22 is independent. Favorable reconsideration and further examination are respectfully requested.

In the Office Action, sole independent claim 22 was rejected over newly-cited U.S. Patent No. 3,968,411 (Mueller). As shown above, Applicants have amended claim 22. In view of the amendments to claim 22, withdrawal of the art rejection is respectfully requested.

Amended independent claim 22 is directed to circuitry for use with a mobile telephone. The circuitry comprises a terminal for use with a high-frequency signal, at least two signal lines, a switching unit for connecting the terminal to a signal line, and a primary protection device for protecting against electrostatic discharges. The primary protection device is between the terminal and the switching unit, and the primary protection device comprises a first element that diverts all voltages having a pulse height greater than a 200V switching voltage to a reference potential.

Mueller is not understood to disclose or to suggest the foregoing features of claim 22. In this regard, Mueller describes a protective device comprised of spark gap devices 20, 22 between an antenna base and a switch 18, and another spark gap device 24 between switch 18 and receiver 16 (see Fig. 1 below).

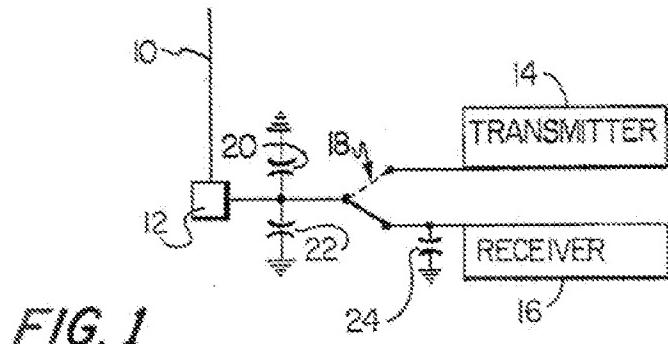


FIG. 1

As explained in Mueller

Spark gap devices 20, 22 and 24 may be any commercially available spark gap device. For one radio system in which the present system has been installed, spark gap devices having a capacitance of approximately 1pf apiece and a breakdown DC voltage of 9,000 volts was used. These numbers are mere examples and any spark gap device having the proper breakdown voltage and minimum capacitance can be used.<sup>1</sup>

Thus, in Mueller, the spark gap devices require a voltage of at least 9,000V (9kV) to divert the voltage to ground. Therefore, Mueller clearly does not divert *all voltages* having a pulse height greater than a 200V switching voltage. For example, a voltage of 300V would not be diverted to ground (a reference potential) in Mueller's circuit.

Applicants note that the Mueller explains that its numbers are mere examples and that "any spark gap device having the proper breakdown voltage and minimum capacitance can be used". However, claim 22 is directed to circuitry for use in a mobile telephone, whereas the circuitry described in Mueller is for use with 1970's technology radio systems.<sup>2</sup> Circuitry for use in a mobile telephone may be more sensitive to lower voltages

<sup>1</sup> Col. 3, lines 7 to 15

<sup>2</sup> Mueller was filed in 1975

than the 1970's radio systems described in Mueller. Therefore, Applicants submit that, despite the foregoing statements in Mueller, there is no suggestion in Mueller to use its spark gap or other protective device in the context of circuitry for a mobile telephone to divert to all voltages having a pulse height greater than a 200V.

In this regard, Applicants note that Mueller is designed to

to provide protection of a transmitter/receiver system, operating at two to 30MHz, from high amplitude, short duration electromagnetic transients.<sup>3</sup>

Mueller also states that

The two spark gap devices 20 and 22 are connected near the base 12 of the antenna 10 and sense high amplitude, short duration electromagnetic transients in less than 10 nanoseconds and shunts the transients to ground.<sup>4</sup>

Mueller therefore has a sensing bandwidth of about 100MHz ( $f=1/\tau$ ). Given its operating frequency and sensing bandwidth, Mueller is clearly for use with short wave radio applications. Short wave radios are not used in mobile telephony, which often may be required to operate at frequencies of up to 2GHz.<sup>5</sup>

That Mueller does not disclose or to suggest circuitry for use in a mobile telephone becomes even more evident when one considers the parts that make up the Mueller circuit. More specifically, Figs. 3 and 4 show the spark gap devices 20, 22 and 24 mounted in antenna and receiver circuits. Given the relative size of coaxial connector 46 in Fig. 4, it is

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<sup>3</sup> Col. 2, lines 9 to 12

<sup>4</sup> Col. 2, lines 51 to 55

<sup>5</sup> See, e.g., page 15, lines 4 to 7 of the translation.

estimated that spark gap 24 is several centimeters in length, which would clearly not be usable in a mobile telephone.

For at least the foregoing reasons, claim 22 is believed to be patentable over Mueller.

The dependent claims were rejected as follows: claims 23, 24, 26 to 29, and 31 were rejected over Mueller in view of DE3626800 (Siemens AG); claim 25 was rejected over Mueller in view of Siemens AG and JP-162744 (Hitachi); claims 27 and 32 were rejected over Mueller in view of U.S. Patent No. 5,122,921 (Koss); claim 30 was rejected over Mueller in view of Siemens AG and U.S. Patent No. 4,977,357 (Shrier); claims 33, 35 and 39 were rejected over Mueller in view of Siemens AG and U.S. Patent No. 6,272,327 (Kurchuck); claim 34 was rejected over Mueller in view of Siemens AG and JP02000134945 (Toshiba); claims 36 to 38 were rejected over Mueller in view of Siemens AG, Kurchuck, and U.S. Patent No. 5,276,422 (Ikeda); claim 40 was rejected over Mueller in view of Siemens AG and U.S. Patent No. 6,072,993 (Trikha); claims 41 to 43 were rejected over Mueller in view of U.S. Patent No. 5,521,561 (Yrjölä); and claim 44 was rejected over Mueller in view of U.S. Patent Publication No. 2002/0080537 (Landy).

The references cited against the dependent claims were cited for their alleged disclosure of features found in the dependent claims, and are not believed to remedy the foregoing deficiencies of Mueller vis-à-vis claim 22. For example, since the Mueller circuitry would not be adaptable for use with a mobile telephone, even the disclosure of a mobile telephone in one of the foregoing references would not render obvious claim 22.

In this regard, the Office Action relies on Yrjölä for its disclosure of a mobile telephone.<sup>6</sup> The Office Action states that "it would have been obvious to combine the teachings of Mueller with Yrjölä et al by using the protection circuit of Mueller in a mobile phone". As explained above, however, the protection circuit of Mueller is completely inappropriate for use with a mobile telephone. In this regard, Yrjölä explains that it is operable with TDMA systems, which are typically 2GHz systems in a mobile telephone context.<sup>7</sup> As explained above, the Mueller circuitry does not operate at such frequencies. Furthermore, Yrjölä emphasizes that one of its goals is compactness.<sup>8</sup> Therefore, even if it were possible to use the Mueller circuitry in a mobile telephone context, Yrjölä would still teach against a combination with Mueller due to the size of Mueller's circuitry.

For at least the foregoing reasons, claim 22 is believed to be allowable.

The dependent claims are also believed to define patentable features of the invention. Each dependent claim partakes of the novelty of its corresponding independent claim and, as such, each has not been discussed specifically herein.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim,

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<sup>6</sup> Office Action, page 12

<sup>7</sup> See, e.g., col. 5 of Yrjölä.

<sup>8</sup> See, e.g., col. 1, lines 34 to 38 and col. 3, lines 15 to 18.

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except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney can be reached at the address shown below. All telephone calls should be directed to the undersigned at 617-521-7896.

Please apply any fees or credits due in this case, which have not already been covered by check, to Deposit Account 06-1050 referencing Attorney Docket No. 14219-079US1.

Respectfully submitted,



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